



Service Bulletin

Warranty Information
 Parts Information

Service Information

Bulletin No. 2003-11

Circulate to: Sales Manager Accounting Service Manager Technician Parts Manager

Electric Fuel Pump Troubleshooting

Models Affected

MERCURY/MARINER

Four Stroke, Two Stroke, OptiMax, and Jet Drives with Electric Fuel Pumps

Situation

Mercury receives electric fuel pumps under warranty that when tested, have been found to function properly (**No Problem Found**). If the electric fuel pump pressure reading is incorrect, there are a number of items (listed below) to consider prior to replacing the pump.

Items to consider:

- Is there a good fuel supply to the electric pump?
- Is the pump receiving the correct battery voltage?
NOTE: Battery voltage too high may cause ECM to turn pump circuit off.
- Is the fuel pressure regulator operating correctly?
- Is the air pressure regulator operating correctly (OptiMax Product)?
- Is the pressure gauge that is being used to test accurate?
- Are you using the correct specifications for the engine?
- Do you have the pressure gauge connected correctly?
- Is the fuel filter restricting fuel flow to the pump?

Fuel Pressure Test

The location of fuel pumps, regulator, and hose connections will vary between models, but the general process for checking fuel pressure remains the same. A test gauge is connected on the output side of the pump and the pump is momentarily run to build pressure. In some cases there will be a pressure test port available to connect the gauge to. In other cases you may need to temporarily install a TEE fitting to connect the pressure gauge.

Once the gauge connection is made, electrically operate the pump and observe the pressure reading. Refer to the correct Service Manual for specifications.

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Fuel Supply to Pump

A lack of fuel going to the pump will cause a low/no pressure reading. Most electric fuel pumps on EFI or OptiMax engines draw their fuel from the Vapor Separating Tank (VST). Make sure there is a good supply of fuel reaching the VST and pump. Refer to the correct Service Manual for test procedure.

Checking Battery Voltage to Pump

If the pump does not run when the ignition key is turned to the ON position or when the engine is cranked over with the starter, battery voltage to the pump should be checked.

Amperage Draw Test

An amperage draw test of the electric fuel pump can also be very useful when diagnosing fuel system problems.

NOTE: A properly charged battery is critical to an accurate amp reading. Make sure to use a fully charged battery when making this test. Amperage reading higher than normal indicates mechanical or electrical problems with the pump. Amperage reading lower than normal is an indication that the pump is not under load or pumping fuel. There may be no fuel in the VST or there is a blockage preventing the fuel from reaching the pump.

NOTE: An electric pump that has formed fuel gum may have high amperage draw, or not operate at all. See Outboard Service Bulletin 2002-20 or Jet Drive Bulletin 2002-07 for more information on seized pumps.

The fuel pump specification chart below is current at the time of the issuance of this bulletin. Refer to the proper Service Manual for the latest specifications.

| Model | Serial Range | High Pressure Electric Pump | Low Pressure Electric Pump | AMP Draw High / Low | Boost Pump Jet Drive |
|--------------------|---------------------|----------------------------------|---------------------------------|---------------------|----------------------|
| Four Stroke | | | | | |
| 30,40,50,60 | 0T409000 and up | 289 - 303.4 kPa (42 - 44 psi) | | | |
| 115 | 0T178500 and up | 283 - 303.4 kPa (41 - 44 psi) | | | |
| 225 | 0T653945 and up | 261 - 303.4 kPa (38 - 44 psi) | 75.8-103.4 kPa (11 - 15 psi) | | |
| Two Stroke | | | | | |
| 150 XRI/MAG | All | 248 - 269 kPa (36 - 39 psi) | | | |
| 175/200 | 0G303045 and down | 248 - 269 kPa (36 - 39 psi) | | | |
| 175/200/225/250 | 0G303046 - 0T408999 | 234 - 248 kPa (34 - 36 psi) | | | |
| 175/200 | 0T409000 and up | 283 - 310 kPa (41 - 45 psi) | | 3.5 - 4.5 | |

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| Model | Serial Range | High Pressure Electric Pump | Low Pressure Electric Pump | AMP Draw High / Low | Boost Pump Jet Drive |
|-------------------------|------------------------|-----------------------------------|------------------------------------|----------------------|---------------------------------|
| 225/250 | 0T409000 and up | 283 - 310 kPa (41 - 45 psi) | | 3.5 - 4.5 | |
| 250 XB | All | 234 - 248 kPa (34 - 36 psi) | | | |
| OptiMax | | | | | |
| 75/90/115 3 Cyl. | All | 744.6 ± 13.8 kPa (108 ± 2 psi) | 165.5 - 179.3 kPa (24 - 26 psi) | 10 - 14 H 1 - 2 L | |
| 115 - 175 | All | 620.5 ± 13.8 kPa (90 ± 2 psi) | 41.4 - 62.1 kPa (6 - 9 psi) | 5 - 9 H 1 - 2 L | |
| 200/225 | 2002 and prior | 620.5 ± 13.8 kPa (90 ± 2 psi) | 41.4 - 62.1 kPa (6 - 9 psi) | 6 9 H 1 - 2 L | |
| 200/225 | 2003 and later | 620.5 ± 13.8 kPa (90 ± 2 psi) | 165.5 - 179.3 kPa (24 - 26 psi) | 10 - 14 H 1 - 2 L | |
| Sport Jet | | | | | |
| 240 | 0E384500 - 0E406399 | 234 - 248 kPa (34 - 36 psi) | | | |
| 240 | 0E406400 and up | 283 - 310 kPa (41 - 45 psi) | | | 27.5 ± 3.4 kPa (4 ± 0.5 psi) |
| 240 M ² | 0E373933 - 0E406399 | 234 - 248 kPa (34 - 36 psi) | | | |
| 240 M ² | 0E406400 and up | 283 - 310 kPa (41 - 45 psi) | | | 34.5 - 62.1 kPa (5 - 9 psi) |
| 200 DFI /M ² | 0E384500 and up | 613.6 ± 13.8 kPa (89 ± 2 psi) | 41.4 - 62.1 kPa (6 - 9 psi) | 1 - 10 | 34.5 - 62.1 kPa (5 - 9 psi) |
| 250 DFI /M ² | 0E407100 and up | 620.5 ± 13.8 kPa (90 ± 2 psi) | 41.4 - 62.1 kPa (6 - 9 psi) | 1 - 10 | 41.4 - 62.1 kPa (6 - 9 psi) |

H - High pressure electric fuel pump

L - Low pressure electric fuel pump

Warranty

Any electric fuel pumps that are returned for warranty and found to function properly (**No Problem Found**) may be subject to claim denial and parts returned to dealer.

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